



**Andrews Survey & Engineering, Inc.**  
Land Surveying - Civil Engineering - Site Planning



# **OPERATION AND MAINTENANCE PLAN**

## **Self-Storage Facility**

**100 Milford Road  
South Grafton, MA**

**February 4, 2015**

**Assessors Plat/Lot:  
133/1B**

**Zoning District:  
Office-Light Industrial**

**Applicant:  
Hilltop Self-Storage of Grafton, LLC  
100 Milford Road  
South Grafton, MA 01560**

**Representative:  
Andrews Survey & Engineering, Inc.  
104 Mendon Street  
Uxbridge, MA 01569**



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# **Long Term Pollution Prevention and Stormwater System Operation and Maintenance Plan**

## **TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page</u></b>
Preface	2
Project Description	3
Maintenance Requirements	3
Operation of Best Management Practices	4
Inspection and Maintenance of Best Management Practices	5

## **Figures**

Best Management Locus Plan

## **Attachments**

Best Management Practices Inspection Log

## **Preface:**

The goal of this manual is to improve water quality by initiating performance standards for the operation and maintenance of stormwater management structures, facilities, and recognized practices. The stormwater performance standards are set up to meet the statutory and regulatory authorities of the Department of Environmental Protection, including the Wetland Protection Act, surface water discharge permits under the Clean Waters Act, the 401 certification program for fill in wetlands, and the 401 certification of federal permits based on the water quality standards.

The local Conservation Commission and the Department of Environmental Protection are responsible for ensuring the protection of wetlands through the issuance of permits for activities in flood plains and in or near wetlands, as per the Wetlands Protection Act, MGL c.131 s. 40. Proposed work within a resource area or a one hundred (100') foot buffer zone requires an order of conditions.

Resource areas include freshwater and coastal wetlands, banks, beaches, and dunes bordering on estuaries, streams, riverfront, ponds, lakes, or the ocean; lands under any of these bodies of water; land subject to tidal action, coastal storm flowage, or flooding.

The discharge of pollutants to water of the Commonwealth without a permit is prohibited under the state Clean Waters Act, MGL c. 21, ss 26-53. Stormwater discharges are subject to regulations when two criteria are met under 314 CMR 3.04(2). First, there must be "conveyance or system of conveyances (including pipes, ditches, and channels) primarily used for collecting and conveying stormwater runoff." 314 CMR 3.04(2)(a). Second, the stormwater runoff must be "contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, or oil and grease," or, be designated on a case-by-case basis. Such designations must be made when the "stormwater discharge" is subject to effluent or toxic pollutant limitations, is located in an industrial plant area, or may be a significant contributor of pollutants to waters of the Commonwealth. Any activity resulting in a discharge to waters of the United States must comply with Section 401 of the Federal Clean Water Act and comply with state water quality standards. All stormwater discharges must be set back from the receiving waters or wetlands and best management practices (BMP) must be implemented. A permit is required for any stormwater discharge to an Outstanding Resource Water (ORW) which meets the regulatory definition in 314 CMR 3.04(2). Outstanding Resource Waters are defined under Surface Water Quality Standards 314 CMR 4.06 and include public surface water supplies, coastal and some inland Areas of Critical Environmental Concern (ACECs), and certified vernal pools.

This manual is set up to explain how to operate and maintain Best Management Practices that control erosion and minimize delivery of sediment and other pollutants to surrounding water and air.

Chapter 1 is an introduction to the site and describes the Best Management Practices

used on this site.

- Chapter 2 outlines the inspection and maintenance schedules for the site.
- Chapter 3 outlines the operation and function of the Best Management Practices.
- Chapter 4 describes how and when the Best Management Practices should be inspected and how frequently they must be maintained and cleaned.

## **1. Project Description**

The project area is a vacant field located at 100 Milford Road South Gafton, MA totaling 5.0± acres. The project site is bounded to the south by a solar farm, to the east and west by single family homes, and to the north by Milford Road. Access to the project site is via Milford Road. The land is grassed with a terrain ranging in elevation between four-hundred-seventy-six (476) and four-hundred-sixty-two (462) feet. The site generally sloped from the south to the north.

This proposed development will create 9 self-storage buildings with 1 building containing office space with associated paving, utilities and earthwork occupying 3.82± acres, or 77.0%± of the entire site as depicted on the Topographic & Utility Plan. The buildings will be accessed from Milford Road.

Stormwater runoff from the development will be collected in a number of Best Management Practices (BMP's), including an infiltration basins.

To control erosion and minimize delivery of sediment and other pollutants into the atmosphere and adjacent wetlands, Best Management Practices (BMP's) have been provided within the site's stormwater management system. These practices include but are not limited to:

- Street Sweeping
- Deep Sump Catch Basin
- Sediment Forebay
- Infiltration Basin;

This manual is designed to help responsible parties become aware of urban non-point pollution problems and to provide detailed information about operating and maintaining stormwater management practices. The success of the Best Management Practices is dependent on their continued operations and maintenance.

## **2. Maintenance Requirements**

- Owner  
The owner(s) of the BMP's shall be the person, persons, trust, corporation, etc., or their successors who have title to the land on which the BMP is located. It is anticipated that all BMP's will be owned and maintained by Hilltop Properties, LLC.

- Operation and Maintenance Responsibilities

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis by a qualified professional with expertise in inspecting drainage system components. All of the stormwater BMP's shall be kept in good working order at all times.
- A maintenance agreement providing for the funding, operation and maintenance of all the stormwater management BMP's shall be provided.

- Source of Funding for Operation and Maintenance

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- A maintenance agreement providing for the funding, operation and maintenance of all the stormwater management BMP's shall be provided.
- Approximate estimated annual maintenance costs for the site are:
  - Deep sump hooded catch basins - \$300 / structure
  - Manhole and connecting pipes - \$100 / structure
  - Sediment Forebay & Infiltration Basin - \$750
  - Street Sweeping - \$1,000 - \$10,000  
(depending on frequency and type of sweeping performed)

- Schedule for Inspection and Maintenance:

- BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis in accordance with this manual. All of the stormwater BMP's shall be kept in good working order at all times.
- As a minimum, the owner shall follow the general guidelines outlined herein for the BMP's provided on this site.
- An Operation and Maintenance log must be maintained for the last three years, outlining inspections, repairs, replacement and disposal for each Best Management Practice (BMP). In the case of disposal, the log shall indicate the type and material and the disposal location. This rolling log shall be made available to the Mass DEP and/or the Uxbridge Conservation Commission upon request.

### 3. Operation of Best Management Practices

#### Street Sweeping

Is a nonstructural source control performed by mechanical means in an effort to limit sediment and particulates from impervious surfaces as an effort to control or limit the sediment migration to other stormwater BMP's during storm events. There are three typical types of sweeping methods, including mechanical, regenerative air and vacuum filter. Mechanical sweepers are the most common and use brooms or brushes to scour the pavement. Regenerative air sweepers blow air onto the impervious surface causing sediment and other fine particles to be blown from

the surface so they can be vacuumed. Vacuum filter sweepers are available in wet and dry types. Dry types use brooms to agitate the sediment prior to vacuuming. Wet types work in a similar fashion but use water to suppress dust during the collection activity. The functions of street sweeping include:

- Limit sediment and other fine particulates on impervious surfaces from entering other BMP's;
- Remove and prevent the accumulation of sediment along road and driveway edges.

#### Deep Sump Hooded Catch Basin

Is an underground concrete structure which is designed to retain removed trash, debris and coarse sediment from stormwater runoff and serve as temporary spill containment devices for floatables such as oil and greases prior to discharge into a storm sewer pipe. The functions of a deep sump hooded catch basin include:

- A grate and/or vertical notch found in the curbing, that allow stormwater to enter the structure while filtering out larger objects such as trash and leaves;
- A four foot (minimum) sump below the invert of the storm sewer pipe provides an area for detention time which allows sands and other sediments to settle out of the runoff prior to discharge.

#### Sediment Forebay

Is a post-construction practice consisting of an excavated pit, bermed area or cast (in-place or pre-) structure combined with a weir, designed to slow incoming stormwater runoff and facilitate the gravity separation of suspended solids prior to flowing to a subsequent BMP or system discharge. The functions of the sediment forebay include:

- Filter out sediments within the stormwater runoff
- Reduce runoff velocities;
- Reduce peak discharge flows.

#### Infiltration Basin

Is a stormwater runoff impoundment that is constructed over permeable soils which allow for the recharge of treated runoff into the groundwater. The functions of an infiltration basin include:

- Provide groundwater recharge;
- Reduce local flooding;
- Preserve the natural water balance of the site.

### **4. Inspection and Maintenance of Best Management Practices**

#### Street Sweeping / Pavement Area

At a minimum, will be inspected every spring to determine if any damage has occurred from snow plowing operations. Additionally, asphalt and curbing should be checked every six (6) months [Spring & Fall] in high traffic areas and truck travel areas for damage.

Curbing and/or asphalt is to be repaired using similar materials, to prevent erosion to surrounding soils.

Access drives and parking areas aggressively maintained through the use of mechanical sweepers. Vacuum, regenerative air or rotary broom sweepers may be used at the minimum schedule outlined below:

Vacuum Sweeper (wet or dry)	An average of once per month over the period of each year
Regenerative Air Sweepers	An average of once every two weeks over the period of each year
Rotary Broom Sweepers	An average of once per week over the period of each year

Regardless of type of sweeper used, sweeping will be scheduled primarily in the spring immediately following winter snowmelt and again prior to the first frost of the year in the fall, with the remaining sweepings at regular intervals between these times. The above schedule may be modified in connection with the use of alternative de-icing methods to impervious surfaces during the winter months, such as brine solutions that are applied as a liquid rather than traditional sand and salt methods.

Snow shall not be stockpiled in wetland areas or any of the Best Management Practice areas. Every effort shall be made to plow snow so when it melts, the runoff will be toward a best management practice which provides treatment.

#### Deep Sump Hooded Catch Basins and Manholes

At a minimum, deep sump hooded catch basin and manhole inlets shall be inspected four times per year. Inlet inspection should be conducted at the end of the foliage and snow removal seasons. Each structure should be cleaned whenever the depth of sediment deposits is greater than or equal to one half the depth of the sump from the bottom of the structure to the bottom of the lowest pipe invert. Structures shall be inspected for a buildup of sediments, oils and debris, cracks, breaks, or deformations. Any function of the catch basin or manhole structure that is not in working order will be replaced with similar materials, as per the detail, to prevent the storm sewer system from failing.

The catch basins and manhole sumps will be cleaned by means of hand held shovels, scallop shovel and/or vactor trucks. The grate opening shall be clear of any foreign or lodged object. Sands and salts used in the winter will be removed from the catch basin sumps in the early spring. Leaves, pine needles, and branches brought down by autumn winds, rain, and cold weather will be removed from the catch basins sumps in the late fall.

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from a catch basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

#### Sediment Forebay

At a minimum, the forebay shall be inspected after every major storm event (1-inch of rain or greater) for the first six (6) months, then monthly thereafter. Sediment and debris should be

removed a minimum of four (4) times per year, starting in the spring and spaced at even time increments until the late fall season, thereafter.

Grass vegetation within the sediment forebay will be mowed, at a minimum of twice a year, keeping the height of the grass between three (3) and six (6) inches. Inspections should identify areas of rilling and gulying or other areas which need to be reestablished. Replace any vegetation damaged during cleaning by reseeding or resodding. When reseeding, incorporate practices such as hydroseeding with a tackifier, blanket or similar practice to ensure that no scour occurs in the sediment forebay, while the seeds germinate and develop roots.

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from the sediment forebay deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

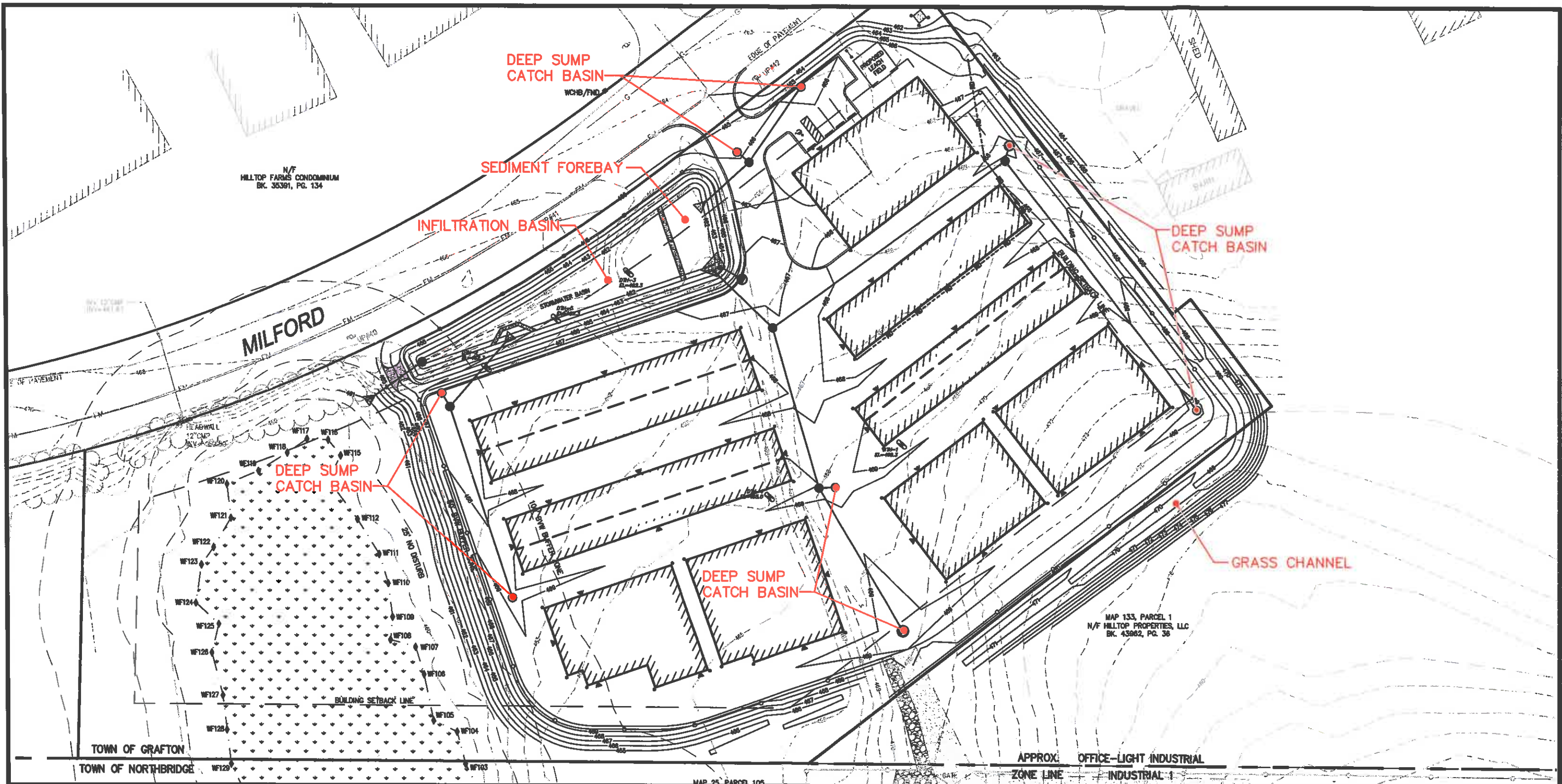
#### Infiltration Basins

At a minimum shall be inspected after every major storm event (1-inch of rain or greater) for the first six (6) months, then in the spring and fall of every year, thereafter. Note how long water remains standing in basin after a storm; standing water within the basin >72 hours after storm events suggests potential clogging and should be immediately addressed. Also, check for signs of differential settlement, cracking, erosion, leakage in embankments, tree growth in embankments, condition of riprap, sediment accumulation and the health of the turf.

Infiltration basins shall be mowed a minimum of twice per year. Grass clippings and accumulated organic matter should be removed to a non-sensitive area. Repairs and reseeding should be done as required. Sediment and debris should be removed manually when infiltration basin is thoroughly dry, a minimum of once per year or when the sediment level reaches a depth of 3".

At a minimum, inspect and clean pretreatment devices associated with the infiltration basins at least twice a year.

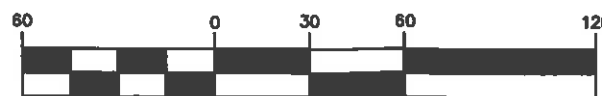




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GRAPHIC SCALE



( IN FEET )  
1 inch = 60 feet

PREPARED FOR:

HILLTOP SELF-STORAGE OF GRAFTON, LLC  
100 MILFORD ROAD  
SOUTH GRAFTON, MA 01560

DATE: FEB. 4, 2015

DES'D BY: JJS

ASE PROJECT: 2014-316

CHK'D BY: PBH

## BEST MANAGEMENT PRACTICES LOCUS

HILLTOP SELF-STORAGE  
OF GRAFTON, LLC  
100 MILFORD ROAD  
SOUTH GRAFTON, MA

## Best Management Practices (BMP) Inspection Log

General Information			
<b>Project Name</b>	Self-Storage Facility		
<b>Location</b>	100 Milford Road South Grafton, MA		
<b>Date of Inspection</b>		<b>Start/End Time</b>	
<b>Inspector's Name(s)</b>			
<b>Inspector's Title(s)</b>			
<b>Inspector's Contact Information</b>			
<b>Inspector's Qualifications</b>			
<b>Type of Inspection:</b> <input type="checkbox"/> Regular <input type="checkbox"/> Emergency			
Weather Information			
<b>Weather at time of this inspection?</b> <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
<b>Are there any discharges at the time of inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>If yes, describe:</b> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>			

### Site-specific BMPs

- *The structural BMPs are identified on the BEST MANAGEMENT PRACTICES LOCUS included within the LONG TERM POLLUTION PREVENTION & STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN. Carry a copy of the Locus map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Deep sump catch basin	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Infiltration Basin	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Overall Site Issues**

*Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.*

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are discharge points and receiving waters free of any sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Are storm drain inlets properly working?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Is trash/litter from site areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	(Other)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Non-Compliance**

Describe any incidents of non-compliance not described above:

### **CERTIFICATION STATEMENT**

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**Print name and title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_